The Clinical Prediction of Premature Labour, by Self-observation of Uterine Contractility and External Tocography

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Based on the favourable results of an our previous study of 143 cases investigations were carried out evaluating the so called method of registered self-observation of uterine contractility advised by SALING /1/.

Materials and methods

This work includes 125 patients selected on the base of the PDP-lists and admitted to the Obstetric Department of the District Hospital, Debrecen between the 26th and 34th weeks of gestation. In this series the incidence of prematurity /birth weight under 2500 grams/ was 23,7 % in contrast to the 11,4 % mean value observed in our department.

Separate wards were established with specially trained personal to facilitate the investigations. On the day of admittance the cervical state was recorded and the patients were trained by simultaneous external tocographic control to be able to perceive and note uterine contractions. The data concerning the uterine contractility were registered on the following three days without administering any drugs.

The self-observation was continued according to the original description. On the first day after admittance the uterine activity was recorded for 60 minutes with portable external tocographs /Tocograph T 500 product of the firm Kranzbühler, Solingen; we found this type the best suited for this purpose/. At the end of the investigation the cervical state was again registered.

The birth weight and gestational age was noted on the investigational protocols later at delivery. The data were analysed by computer /Olivetti P 602/.

From the 125 patients 11 /8,8 %/ were excluded because of incapability of co-operation.

Results

Table 1. Uterine contractility and cervical state in relation to the birth weight in a high-risk population for premature labour /n=114/

	Uterine contractility		Cervical state
	Self-observation >10 contr./day	Ext. tocography >2 contr./hour	Intern.os 1 f.
Birth weight >2500 grams n=87/76,3%/	5 /5,7 %/ $\bar{x}=5,4\pm0,2$	9 /10,3 %/ $\bar{x}=1,1\pm0,1$	14 /16,1 %/
Birth weight <2501 grams n=27/23,7%/	22 /81,5 %/ $\bar{x}=11,6\pm0,4$	17 /63,0 %/ $\bar{x}=3,3\pm0,3$	20 /74,1 %/

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The term and premature deliveries were analysed on the base of the birth weights on Table 1. The data of the two groups regarding as well the percentage distribution of the limit values as the distribution of the mean values shows highly significant differences /$p < 0,001$/ analysed by the chi square test. Practically the same results were obtained if the comparison was based on the gestational age at delivery instead of birth weight.

Table 2. Summarized data of the whole series /n=114/

		Groups of birth weights /grams/			
		-2000	2001-2500	2501-3000	3001-
n		9	18	39	48
Birth weight /grams/	$\bar{x}$	$1736 \pm 77,4$	$2283 \pm 27,9$	$2831 \pm 17,9$	$3415 \pm 31,4$
Gest.age /weeks/	$\bar{x}$	$32,3 \pm 1,0$	$36,8 \pm 0,5$	$38,1 \pm 0,3$	$38,7 \pm 0,2$
Self-observed contr./day	$\bar{x}$	$11,7 \pm 0,5$	$11,5 \pm 0,6$	$5,7 \pm 0,5$	$5,3 \pm 0,4$
Tocography /contr./hr./	$\bar{x}$	$3,4 \pm 0,4$	$3,1 \pm 0,4$	$1,3 \pm 0,3$	$1,0 \pm 0,2$

All data are shown together in the Table 2. It gives convincing evidence that during pregnancy both methods used are equally suitable for indicating the pathologically increased uterine activity and for prediction of threatened premature labour. The table shows that the limit values between physiological and pathological contractility were correctly drawn.

Conclusions

Based on the results of this study the final conclusions are as follows:

1/ The registered self-observation of the uterine contractility -especially after a preciding training and external tocography recording- is a suitable and reliable method for prediction of premature labour already in the prae- and subclinical phase.

2/ The method is suitable and economical for mass screening because more than 90 % of the high-risk population is able to co-operate.

3/ It can be used for indication and management of tocolytic therapy.

References

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